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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,226	10/06/2003	Francis Anthony Darmann	BSW.007C	1569
30636	7590	06/07/2004		
FAY KAPLUN & MARCIN, LLP 150 BROADWAY, SUITE 702 NEW YORK, NY 10038			EXAMINER PATEL, ISHWARBHAI B	
			ART UNIT 2827	PAPER NUMBER

DATE MAILED: 06/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n N .

10/678,226

Applicant(s)

DARMANN ET AL. 

Examiner

Ishwar (I. B.) Patel

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/2003 and 2/2004</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Continuation

1. This is a continuation of application No. 09/661,253, filed on September 13, 2000, now abandoned. The examiner has reviewed the prior art used in the parent application. MPEP § 2001.06(b).

Priority

2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in United Kingdom on March 18, 1998. It is noted, however, that applicant has not filed a certified copy of the British application as required by 35 U.S.C. 119(b). The copy not located with parent application, too.

Information Disclosure Statement

3. The information disclosure statement filed October 6, 2003, is partly considered as copy of document number JP-6-309955 could not be found either in ~~the~~ this application or the parent application.

Drawings

4. The drawings are objected to because the figures are improperly cross hatched. All of the parts shown in section, and only those parts, must be cross-hatched. The cross hatching patterns should be selected from those shown on page 600-114/115 of the MPEP based on the material of the part. See also 37 CFR 1.84(h)(3) and MPEP § 608.02.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

5. Claim 1 is objected to because of the following:

Claim 1 recites the limitation "**the stacks**" in line 6-7. There is insufficient antecedent basis for this limitation in the claim.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 7 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding both the claims 7 and 16, the phrase "respective strength of the two full-width metal tapes are unequal" is unclear, because the strength of the metal tape will depend upon the material property of the metal used and also depend upon the thickness of the tapes. One of ordinary skill in the art will not be able to appraise the scope of the claims, whether, the respective strength is the result of the different

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thickness of the tapes or different material property of the tapes. This is a structural claim and the structure should be clearly recited.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-2, 9, 11, 12 and 18 are rejected under 35 U.S.C. 102(e) as being anticipated by Scudiere et al., US Patent No. 6,110,606.

Regarding claim 1, Scudiere et al., discloses a composite superconducting tape (ceramic conductor 10, figure 1 and 4) comprising:

A multiplicity of constituent superconducting tapes (superconducting ceramic tape 12, figure 1 and 4) stacked parallel to one another with major faces in contact (figure 1 and figure 4), wherein at least some of the constituent superconducting tapes have widths not greater than half a width of the composite superconducting tape and are laid edge to edge with each other (see figure 4 and 1),

the composite superconducting tape including at least one tape (laminates 14 and 16) bridging the stacks (figure 4 and 1, column 5, line 31-36 and column 3, line 9-22).

Regarding claim 2, Scudiere et al., further discloses all the constituent superconducting tapes (12, figure 4) have a width that is substantially a simple fraction of the width of the composite superconducting tape so that the constituent superconducting tapes form two or more stacks with aligned zones there between which contain no superconducting material (see figure 4 with three stacks).

Regarding claim 9, Scudiere et al., further discloses the constituent superconducting tapes are all powder-in-tube superconducting (column 3, line 35-40).

Regarding claim 11, Scudiere et al., discloses a composite superconducting tape constructed from a plurality of superconducting tapes each having two opposite major faces and two opposite edges extending between the major faces, the composite superconducting tape (see, figure 4 and figure 1) including:

a first stack having a plurality of the superconducting tapes (12) wherein each superconducting tape in the first stack has at least one major face in contact with a major face of an adjacent superconducting tape in the first stack (see figure 4),

a second stack having a plurality of superconducting tapes (12) wherein each superconducting tape in the second stack has at least one major face in contact with a

major face of an adjacent superconducting tape in the second stack, wherein at least some of the superconducting tapes have widths not greater than half a width of the composite superconducting tape (figure 4); and

at least one bridging tape spanning between the first and second stacks for maintaining the first and second stacks in a substantially parallel edge-to-edge configuration (bridging tape 14 and 16, see figure 4 and 1, column 5, line 31-36 and column 3, line 9-22).

Regarding claim 12, Scudiere et al., further discloses all the superconducting tapes (12, figure 4) have a width that is substantially a simple fraction of the width of the composite superconducting tape so that the superconducting tapes form at least the first and second stacks with aligned zones there between which contain no superconducting material (see figure 4 with three stacks).

Regarding claim 18, Scudiere et al., further discloses the superconducting tapes are all powder-in-tube superconducting (column 3, line 35-40).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 4-5, 7-8 and 14-17 (claims 7 and 16, as best understood by the examiner in view of 112 second paragraph rejection) are rejected under 35 U.S.C. 103(a) as being unpatentable over Scudiere et al., as applied to claims 1-2 and 9 above, and further in view of Gamble et al., US Patent No. 5,801,124.

Regarding claim 4, Scudiere et al., further discloses at least one bridging tape with full width of composite superconducting tape (column 3, line 60-65), however, fails to explicitly disclose the bridging tapes are silver or silver alloy material.

Scudiere et al., discloses metal tapes selected to provide support structure (column 1, line 50-52) along with thermal and electrical conductivity, preferably stainless steel tapes. However, Scudiere et al., further discloses that other metal tapes are also suitable (column 3, line 55-62).

Gamble et al., discloses superconductor composite with silver cladding tape, column 11, line 57-58, including two cladding tapes, figure 4, and further discloses that material and thickness for cladding tapes will be selected in relation to the material and thickness of the superconducting tape and a predetermined load to control the maximum strain on superconducting portion by offsetting the neutral axis of the combined tape (column 9, line 34-67).

Also, it has been held to be to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the composite of Scudiere et al., with bridging tape made of silver, from the teachings of Gamble et al., in order to have the support structure to control the maximum strain to the superconducting material because Scudiere et al., further discloses that other metal tapes are also suitable to provide support structure, along with thermal and electrical conductivity.

Regarding claim 5, the combination of Scudiere et al., and Gamble et al., further discloses two full-width metal bridging tapes, one bridging tape (14) at one end of the stacks and second bridging tape (16) at another end of the stacks, (laminates 14 and 16, see figure 4 and 1 of Scudiere et al., and top and bottom cladding plates, figure 4 of Gamble et al.).

Regarding claim 7, the applicant is further claiming the respective strength of the two full widths metal tapes is unequal.

Scudiere et al., in the disclosed embodiment, fails to disclose the tapes with unequal strength. However, Scudiere further discloses that tapes (laminates 14 and 16) with different thickness can be used depending upon the required protection of the superconducting tape against the bending strain and will be within the scope of the invention, (column 6, line 4-14).

Gamble et al., as applied to claim 4 above discloses the material and thickness of both the cladding tape will be selected in relation to the material and thickness of the

superconducting tape and a predetermined load to control the maximum strain on superconducting portion by offsetting the neutral axis of the combined tape (column 9, line 34-67).

A person of ordinary skill in the art, at the time the invention was made, would be motivated to select a material and thickness of the cladding tape of Scudiere to control the strain of the superconducting tapes.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the composite of Scudiere et al., with bridging tapes with unequal strength, from the teachings of Gamble et al., in order to have support structure to control the strain on the superconducting material, because Scudiere et al., further discloses that tapes with different thickness can be used depending upon the required protection of the superconducting tape against the bending strain and will be within the scope of the invention

Regarding claim 8, the combination of Scudiere et al. and Gamble et al., discloses all the features of the claimed invention, including all elongate components extend longitudinally, as applied to claims 1-2, 4-5, 7 and 9, but fails to disclose the superconducting tape is diffusion-bonded. However, diffusion bonding is a process limitation in a product claim. Such a process limitation defines the claimed invention over the prior art only to the degree that it defines the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the

product is the same as, or obvious over, the prior art. See Product-by-Process in MPEP § 2113 and 2173.05(p) and *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 14, Scudiere et al., discloses the bridging tape a full width of composite superconducting tape (column 3, line 60-65), however, fails to explicitly disclose the bridging tapes are silver or silver alloy material.

Scudiere et al., discloses metal tapes selected to provide support structure (column 1, line 50-52) along with thermal and electrical conductivity, preferably stainless steel tapes (column 3, line 55-62). However, Scudiere et al., further discloses that other metal tapes are also suitable.

Gamble et al., discloses superconductor composite with silver cladding tape, column 11, line 57-58, including two cladding tapes, figure 4, further discloses that material and thickness for cladding tapes will be selected in relation to the material and thickness of the superconducting tape and a predetermined load to control the maximum strain on superconducting portion by offsetting the neutral axis of the combined tape (column 9, line 34-67).

Also, it has been held to be to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the composite of Scudiere et al., with bridging tape made of silver, from the teachings of Gamble et al., in order to have the

support structure to control the maximum strain to the superconductor because Scudiere et al., further discloses that other metal tapes are also suitable to provide support structure, along with thermal and electrical conductivity.

Regarding claim 15, the combination of Scudiere et al., and Gamble et al., further discloses two full-width metal bridging tapes, one bridging tape (14) at one end of the stacks and second bridging tape (16) at another end of the stacks, (laminates 14 and 16, see figure 4 and 1 of Scudiere et al., and top and bottom cladding plates, figure 4 of Gamble et al.).

Regarding claim 16, the applicant is further claiming the respective strength of the two full widths metal tapes is unequal.

Scudiere et al., in the disclosed embodiment, fails to disclose the tapes with unequal strength. However, further discloses that tapes (laminates 14 and 16) with different thickness can be used depending upon the required protection of the superconducting tape against the bending strain and will be within the scope of the invention, (column 6, line 4-14).

Gamble et al., as applied to claim 4 above discloses the material and thickness of both the cladding tape will be selected in relation to the material and thickness of the superconducting tape and a predetermined load to control the maximum strain on

superconducting portion by offsetting the neutral axis of the combined tape (column 9, line 34-67).

A person of ordinary skill in the art, at the time the invention was made, would be motivated to select a material and thickness of the cladding tape of Scudiere to control the strain of the superconducting tapes.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to provide the composite of Scudiere et al., with bridging tapes with unequal strength, from the teachings of Gamble et al., in order to have support structure to control the strain on the superconducting material because Scudiere et al., further discloses that tapes with different thickness can be used depending upon the required protection of the superconducting tape against the bending strain and will be within the scope of the invention

Regarding claim 17, the combination of Scudiere et al. and Gamble et al., discloses all the features of the claimed invention, including all elongate components extend longitudinally, as applied to claims 11, but fails to disclose the superconducting tape is diffusion-bonded. However, diffusion bonding is a process limitation in a product claim. Such a process limitation defines the claimed invention over the prior art only to the degree that it defines the product itself. A process limitation cannot serve to patentably distinguish the product over the prior art, in the case that the product is the

same as, or obvious over, the prior art. See Product-by-Process in MPEP § 2113 and 2173.05(p) and In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

12. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Scudiere et al., and Gamble et al., as applied to claims 1-2, 4-5, 7 and 9 above, and further in view of Fujikami et al., US Patent No. 6,305,069 and Riley, US Patent No. 6,218,340.

Regarding claim 3, the applicant is further claiming the simple fraction is a half, so that there are two stacks.

The combination of Scudiere et al., and Gamble et al., do not disclose the simple fraction as a half, resulting in two stacks in the composite.

Scudiere et al., discloses three stacks of constituent superconducting tapes (figure 4).

Gamble et al., discloses eight stacks constituent superconducting tapes (figure 4).

Riley discloses two stacks arranged side-by-side, (see figure 4, column 4, line 32-45).

Fujikami et al., discloses number of stacks, see figure 2, 5, 6.

A person of ordinary skill in the art at the time the invention was made would be motivated to select the desired number of stacks depending upon the final dimension of

the composite for the desired current carrying capacity, and if two stacks selected, individual stacks will be half the width of the composite, as the tapes are cut into pieces from the same monofilament wires.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to provide the composite of Scudiere et al., and Gamble et al., with two stacks of constituent superconducting tapes, each stack with identical size resulting in the fraction as half of the composite width, from the teachings of Riley and Fujikami et al., in order to have the composite structure with desired width with the required current carrying capacity.

Regarding claim 13, the applicant is further claiming the simple fraction is a half, so that there are two stacks.

The combination of Scudiere et al., and Gamble et al., fails to disclose the simple fraction as a half, resulting in two stacks in the composite.

Scudiere et al., discloses three stacks of constituent superconducting tapes (figure 4).

Gamble et al., discloses eight stacks constituent superconducting tapes (figure 4).

Riley discloses two stacks arranged side-by-side, (see figure 4, column 4, line 32-45).

Fujikami et al., discloses number of stacks, see figure 2, 5, 6.

A person of ordinary skill in the art at the time the invention was made would be motivated to select the desired number of stacks depending upon the final dimension of the composite for the desired current carrying capacity, and if two stacks selected, individual stacks will be half the width of the composite, as the tapes are cut into pieces from the same monofilament wires.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made, to provide the composite of Scudiere et al., and Gamble et al., from the teachings of Riley and Fujikami et al., with two stacks of constituent superconducting tapes, each stack with identical size resulting in the fraction as half of the composite width, in order to have the composite structure with desired width with the required current carrying capacity.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Seuntjens et al., discloses an oxide superconductor embedded in a ductile metal matrix, see figure 1.

Kamo et al., discloses multiple wires stacked one above the other, see figure 3.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ishwar (I. B.) Patel whose telephone number is (571) 272 1933. The examiner can normally be reached on M-F (8:30 - 5:00).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamand Cuneo can be reached on (571) 272 1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

I B Patel
Examiner
GAU: 2827


David A. Zarnke
Primary Examiner
5/28/09